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The teeth and their care.



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Ontario Department of Agriculture

WOMEN'S INSTITUTE BRANCH

BULLETIN 181

The Teeth and Their Care

**Prepared by the Educational Committee of the
Ontario Dental Society**

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BULLETIN 181.]

[JUNE, 1910.

Ontario Department of Agriculture

WOMEN'S INSTITUTE BRANCH.

The Teeth and Their Care

Dental Hygiene and its Relation to Health.

FOREWORD.

This pamphlet is written with the object of showing (1) the importance of the teeth, (2) the advantages to be gained by an intelligent knowledge of these organs, and (3) how to care for them.

Air, water and food are the three requisites to human life. Air and water almost in the states in which they come from nature can be used to nourish life. Food, on the other hand, must undergo many complex processes before it can become a part of the human body. It follows that the organs which are provided to change food from that condition in which nature supplies it, into the condition in which it can be used to nourish the body and sustain life, must be able to do their work properly, otherwise health is impossible.

Therefore it is plainly seen that the condition of the teeth, standing at the very gateway of life and health, is a matter of vital importance.

In the following pages this subject is treated briefly in a general way. Should demand arise, the Department may issue further bulletins dealing more extensively with the various phases of the subject that are of particular public interest. The general subject of "Prevention of Decay," for instance might well be dealt with in a separate bulletin.

GOOD TEETH AND A SANITARY CONDITION OF THE MOUTH A NECESSITY TO HEALTH.

Few people realize how bodily health depends upon a clean, healthy condition of the mouth and teeth. When the world learns that neglect of the mouth turns the crevices of the teeth into foul receptacles for decaying matter, containing many disease-producing germs such as those

of tuberculosis, diphtheria and pneumonia, then there will be a great awakening to the vital importance of hygiene of the mouth, and people will be properly trained to care for their teeth and to keep their mouths in a sanitary condition.

The mouth presents ideal conditions for the development of germs of disease. Here they find food, heat and moisture, and little crevices where they may remain quietly lodged, a myriad army, bent on their errand of disease and death. The opportunity for which they wait is the inevitable lowering of vitality which in many cases results from an unsanitary condition of the mouth. A healthy body possesses means by which to fight, conquer and destroy the germs of disease, which can only thrive on ground weakened to their attack. When germs are carried into the stomach and intestines and find the vitality already lowered through faulty digestion, they thrive and carry on their work of destruction. Tuberculosis, the Great White Plague, frequently ensues from the introduction of germs through the mouth as the direct result of uncleanliness. Proper sanitary care of the teeth and mouth will keep the oral cavity comparatively free from the germs of disease, and proper mastication will keep the vitality of the tissues such that the attack of the germs will be futile.

In the mouth solid particles accumulate from the breath, saliva and food. These deposits become cemented to the teeth by a viscid mucus which exudes from the glands of the oral cavity. To mouth-breathers this condition of the mouth becomes a source of infection to their lungs by means of the air drawn into the lungs through the mouth. The oral cavity, then, when improperly cleansed, becomes infected with bacterial formation, with particles of decomposing food, with unhealthy saliva, with pus from inflamed gums, also from decayed teeth, and other pathologic conditions. In this is presented a true picture of the innumerable sources of infection inseparably connected with diseased teeth. Incredible as it may seem, these conditions obtain, not in one class of society alone, but describe the average mouth conditions of the race.

DISEASES OF THE TEETH.

To some "disease" may seem too dignified a term to apply to decay of the teeth. Smallpox and pneumonia are widely recognized as diseases, but many people regard decay of the teeth as a purely local disturbance, distressing, but not alarming. It is because decay of the teeth seems only to be an indirect cause of other diseases that so many regard it lightly. Decay is caused by an acid destroying the tooth substance. The acid is produced by a micro-organism which becomes attached to the tooth.

Once the enamel or outer layer is penetrated, the dentine or softer tissue underlying the enamel dissolves rapidly in the presence of the acid. The decay gradually works its way towards the centre of the tooth, undermining the whole crown, and frequently leaving standing the apparently healthy enamel as a mere shell, while the destructive process is going on within. Thus it occurs that there often comes an unpleasant surprise when there is a sudden collapse of a tooth which was thought to be but slightly decayed.



Molar tooth showing the progress of decay toward the pulp (nerve).

- A. Cavity of decay.
- B. Pulp.

In the centre of the tooth is a very sensitive organ, the pulp (popularly called the nerve), which normally is covered on all sides with tooth substance. When the tooth is penetrated by decay, heat, cold, or simple pressure (as in eating) irritates the insufficiently protected pulp and causes pain. Such a condition interferes with the function of the teeth for mastication.

THE IMPORTANCE OF PROPER MASTICATION.

The process by which food is changed into nourishing material, and rendered capable of being absorbed and built into the different tissues of the body, is called digestion.

The first process necessary to digestion is mastication, which is performed chiefly by the teeth. Mastication consists in breaking up the food

into small particles, and mixing it with saliva until it is a thick, creamy fluid, and in condition to be swallowed without effort.

It is necessary for the food to enter the stomach in this condition, otherwise the stomach cannot take up its work at the right stage and continue the process of digestion in a proper manner, but rather is forced to pass the unwholesome mass into the intestines, where proper absorption is impossible, and hence nourishment is not attained. Intestinal irritation, and a process of slow starvation, frequently results, with a lowering of vitality and a consequent predisposition to disease.

The food reaching the stomach in a more or less lumpy condition also acts as an irritant on the delicate lining membrane of that organ, causing dyspepsia or indigestion; if the irritation continues chronic catarrh of the stomach and dilatation of that organ may occur, leading to wasting chronic indigestion and invalidism. A very large number of such cases may be traced to deficient mastication due to diseased teeth.

All food should be masticated until ground to the finest consistency, not alone for the purpose of reducing it to fine particles, but to have it thoroughly incorporated with the salivary secretions. These secretions have a profound chemical action upon the food in its preparation for the stomach. The saliva enters the mouth through tiny canals leading from special glands. Of these openings some are found on the floor of the mouth under the tongue; and two larger openings, one on each cheek opposite the first molar teeth. Hence it is important to use both sides of the mouth in chewing the food, not only to secure the maximum of masticatory surface, but also to insure a perfect incorporation of the saliva with the food.

The proper mastication of food is such an important factor in the maintenance of good health, that Horace Fletcher, a man who has demonstrated its value by practical methods, has been granted high scientific merit merely for directing the thought of the world toward the importance of the thorough mastication of food.

Proper mastication will not only correct many diseased conditions of the general system, but will have a marked local effect on the teeth themselves, for exercise is just as necessary for growth and strength in the jaw and teeth as in any part of the body. Use develops strength—disuse results in an atrophy or wasting of the parts. To maintain a sufficient blood supply to the teeth they must be exercised regularly.

There are two public monuments to decayed teeth in our land, built by our new-world civilization, "Prepared Foods" and the "Quick Lunch Counter." For the sake of your teeth, for the sake of humanity, and for the sake of a longer length of life, avoid prepared foods, and chew your own food. It does not so much matter what you eat as how you eat it. Chew your food to a creamy consistency, and your breath will be sweeter and your stomach lighter. Your appetite will not be an enemy of digestion. Do not expect the stomach to do the work of the teeth.

SOME FURTHER RESULTS OF DENTAL DECAY.

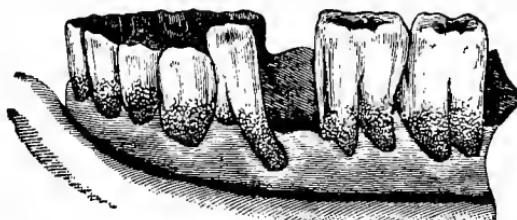
The serious results of decayed teeth do not stop with the harboring of germs, nor with faulty mastication. The decay penetrates the tooth toward the nerve, and the resulting irritation causes the pulp to die, and with its death pain, for a time, ceases. The pulp soon decays, becomes putrescent and sets up an inflammation in the adjacent tissue, most frequently resulting in an abscess. The result is a swelling of the surrounding parts, throbbing pain, feverishness and loss of appetite. The tooth becomes very sensitive to pressure, the mere act of closing the teeth together causing intense pain.

The abscess thus formed is commonly known as a "gumboil," but is more properly called an alveolar abscess. The pus makes, through the bone of the jaw, a small channel which usually opens into the mouth. Although the pain and swelling now subside, yet the pus continues constantly to drain into the mouth, and so affects the whole system. People with decayed teeth and diseased roots are thus frequently subjected to slow poisoning, the health being undermined before the source of trouble is located.

Many cases of pernicious anaemia are found to originate in the constant draining of pus into the mouth from abscessed teeth. Other ailments resulting from the presence of these poisons are chronic tonsillitis and persistent inflammation of the membrane of the throat.

THE LOOSENING OF TEETH.

There are some people whose teeth decay very little who are often victims of a worse trouble. Their teeth become loose and drop out. One cause, among others, of this loosening is a deposit of tartar on the teeth which encroaches on the gum tissue, acting as an irritant and causing the gum to recede. The tooth becomes loose and sore to pressure.



Show ing tartar on the teeth, resulting in a recession of the gums and the ultimate loss of the tooth.

Pus pockets frequently form under the free margin of the gum, and the consequent discharge of pus is not only offensive but dangerous. This condition is technically known as *Pyorrhoea-Alveolaris*. Its progress is gradual and not accompanied by pain, and consequently its presence is not usually recognized until it has progressed to an advanced stage. This disease is amenable to treatment, and the tartar should be thoroughly removed at regular intervals.

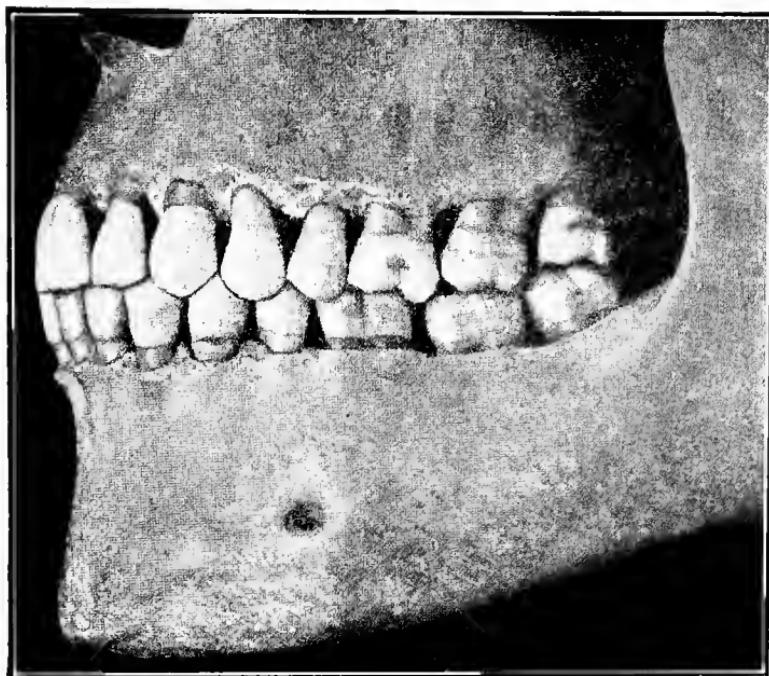
WHEN A TOOTH IS LOST.

Teeth may be lost through decay, or loosening, but from either cause the loss of one or two teeth seriously impairs the power of mastication, and the more extensive this loss the greater should be the time spent in chewing the food. When, for instance, a lower tooth is lost, the service of the upper opposite tooth is lost as well, for want of an antagonizing surface. But this is not all, as there is a constant inclination of the teeth on either side of the resulting space to tip toward one another, and the result is, that instead of the whole broad surface of the teeth being used in mastication only the corners of the teeth are used.



Showing results of loss of tooth:

- A. Remaining teeth on either side of space tipping over.
- B. The elongation of the tooth in the opposite arch, and its ultimate loss.



The permanent teeth in normal occlusion, showing a perfect masticating apparatus.

Thus the loss of a single tooth greatly impairs the amount of grinding surface for crushing food, and it follows that more time and care is necessary to reduce the food to a proper consistency for digestion.

THE TEETH OF THE CHILD.

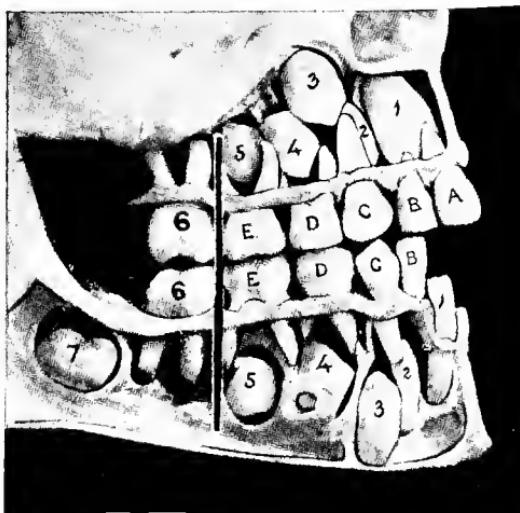
The conditions that have just been described are applicable to the case of the child.

As a rule a child's mouth is a hotbed for disease germs. Fully ninety per cent. of school children have been found to have decayed teeth. Such statistics should impress upon thinking people the great need for dental inspection of school children.

The average child begins to clean its teeth about the time its vanity is awakened, usually after all the permanent teeth have erupted, at twelve or thirteen years of age. It is not a wonder the teeth decay. It is a marvel they ever escape. The best results in properly caring for the teeth are obtained by teaching the child at an early age how to keep the mouth in a clean condition.

It is commonly considered that the temporary teeth of a child are not worth caring for, or filling, if decayed, because a set of new ones will soon take their place.

This attitude towards the temporary teeth is very universal, and also very inconsistent with the best interests of the child.



A diagram showing the method of eruption of the permanent set of teeth and the way they replace the temporary ones. Note particularly that the tooth 6 (behind the black line) is the most important tooth in the mouth. Notice also it erupts independently at 6 years of age and does not replace a temporary one.

THE TEMPORARY TEETH:

- A. Central } Incisors.
- B. Lateral } Incisors.
- C. Cuspid.
- D. 1st Molar.
- E. 2nd Molar.

PERMANENT TEETH:

- 1. Central } Incisors.
- 2. Lateral } Incisors.
- 3. Cuspid.
- 4. 1st Bicuspid.
- 5. 2nd Bicuspid.
- 6. 1st Permanent Molar.
- 7. 2nd Permanent Molar.

There are twenty temporary teeth and thirty-two permanent. Thus a normal adult has twelve more teeth than a child. These come in back of the temporary teeth, three on each side below, and three on each side above, and are known as the molars of the permanent set, which erupt at the ages of six, twelve and twenty respectively. The first permanent molar (and let it be urged to remember that it appears when the child is only six years old) is the most important of the permanent set, and yet, because it does not displace a temporary tooth, parents seldom recognize it, and it is allowed to decay. The fact that it erupts painlessly behind the last temporary tooth makes its chance of observation all the less. The neglect of this tooth is a serious mistake. It may be located by counting from the median line, and will be found to be the sixth tooth. This first permanent tooth frequently decays about the time of its erup-

tion because of defects in the enamel, and so it is badly decayed before its presence is realized. The temporary teeth should be given the same strict attention the permanent ones demand. The child should be supplied with a child's size tooth brush that it may early learn to keep the teeth clean. With proper dental attention there is no reason why the temporary teeth should not be preserved for their natural length of time.

The order and time of eruption of the teeth is as follows:

TEMPORARY TEETH.

| | | | |
|-----------------------|----|----|-----------|
| Central Incisors from | 6 | to | 8 months. |
| Lateral " " | 7 | " | 9 " |
| First Molars ... | 14 | " | 16 " |
| Cuspids | 17 | " | 18 " |
| Second Molars . | 18 | " | 24 " |

PERMANENT TEETH.

| | | | |
|-----------------------|----|----|-----------|
| First Molars | 5½ | to | 6½ years. |
| Central Incisors from | 6 | " | 8 " |
| Lateral Incisors | 7 | " | 9 " |
| First Bicuspid | 9 | " | 10 " |
| Second Bicuspid | 10 | " | 11 " |
| Cuspids | 11 | " | 12 " |
| Second Molars | 12 | " | 14 " |
| Third Molars | 17 | " | 23 " |

(wisdom teeth)

These periods may vary slightly. As a rule, the upper teeth erupt a little later than the corresponding lower ones.

IRREGULARITY OF THE TEETH.

The appearance of many people is marred, amounting in some cases to positive deformity, as a result of the teeth being out of place, or the jaw distorted by irregularity. One of the most frequent causes of irregularity of the teeth is the premature loss or extraction of a temporary tooth, thus allowing the remaining teeth to close up the space that ought to have been retained for the permanent one. The correct time for the removal of a temporary tooth is precisely the period of eruption of the permanent one which is to replace it.

When the temporary teeth are properly retained, not only are places reserved for the permanent ones, but the development of the jaw is not interfered with, as the permanent teeth, being larger than the temporary ones, are then compelled to literally force their way into the arch, and it is this lateral pressure that causes a proper development of the dental arch, and without which the jaw is usually undersized for the teeth, with consequent irregularity. The teeth, unlike other organs of the body, are fully developed as to size at the time of their eruption. The pressure exerted by these large permanent teeth is nature's method of forcing the jaws to that state of development which is necessary to accommodate without irregularity the teeth of the adult. Another frequent cause of irregularity is the loss of the "sixth year" or first permanent molar. This tooth is the most important tooth in the arch, being frequently referred to as the "King Tooth." It locks the other teeth in position, and its absence or loss results in an irregularity which is difficult to overcome.



Profile of child before treatment.



Teeth of child before treatment.

Deformity frequently results from the pernicious habit of breathing through the mouth, owing to some obstruction in the nasal passages. Mouth-breathing causes the upper anterior teeth to protrude and the lower ones to recede, giving a weak and undeveloped appearance to the



Profile of same child as above after treatment.



Teeth of same child as above after treatment.

BAD DENTAL HABITS.

The avoidance of bad habits is of as much importance as the formation of good ones. Bad dental habits formed in youth yield evil results which may persist throughout life.

BITING THREAD.—The habit of biting hard substances, and grinding the teeth together as in biting thread, is very injurious.

MOUTH BREATHING.—Breathe through the nose. Nature never intended people to go about with their mouths open. An open mouth exposes the teeth to cold and the throat to disease. Do not take extremely hot or extremely cold substances into the mouth, as sudden changes of temperature are injurious to the teeth.

GUM CHEWING.—Gum chewing is another bad habit which can bring on a chain of very serious results. It injures the expression of the face and distracts the mind. Teachers know well that gum-chewing children are the poorest students.

THE CANDY HABIT.—There is no doubt that sugar is a valuable food, but its excessive use produces a surplus of acidity which is injurious to both the teeth and the stomach. The evil of candy eating is increased when the particles of sweet matter are allowed to remain in the crevices and between the teeth, especially during the night. It is not necessary to be continually chewing and eating to maintain the strength of the body.

GOOD DENTAL HABITS.

The importance of proper care of the teeth becomes manifest when it is remembered that tooth tissue does not repair itself. The old adage that "Prevention is better than cure" is particularly applicable to Dental Caries.

USE THE TEETH.—One of the very best ways of taking care of the teeth is by using them. In the present day and generation this is probably one of the most difficult things to do. It is the old question of soft and prepared foods. Hard substances that require mastication preserve the teeth best, because the hard substances act as abrasives which clean the teeth and massage the gums.

CLEANSE THE TEETH.—Clean the teeth properly twice a day, that is to say, before breakfast in the morning and before retiring at night. In most cases it is a distinct advantage to cleanse them as well after each meal. It is during the night (a period of quiescence) that the beginnings of decay occur if the mouth be not properly cleansed.

SELECTION OF A TOOTH BRUSH.—Select a small tooth brush, so that as much space as possible may be left between the cheek and teeth for the movement of the brush. The brush should reach the last tooth. It

should have short bristles with serrated tufts arranged in rows. The handle should have rounded corners. It is not necessary to use a dentifrice more than once a day; use plenty of water and rely upon the mechanical cleansing of the brush as well as upon the dentifrice. Avoid soaps, acids, and harsh, gritty substances. Use a tooth paste, or preferably a powder, that is a standard preparation, and remember that your object is not alone to clean your teeth, but to clean them without injury either to themselves or the gum tissue.

There is a common-sense method of using a tooth brush which will give the best results. When a good housewife sweeps the floor, she does not sweep across the cracks, but with them; so in brushing the teeth, do not brush across the crevices, but with them. This permits the bristles to pass between the teeth and cleanse the spaces. The best method is to place the bristles on the gum and with a rolling motion brush towards the crowns of the teeth. This is done on the surfaces of the teeth exposed to the cheek as well as those exposed to the tongue. A faithful practice of one week will demonstrate the utility of this method.

CARE OF THE GUMS.—The health of the tooth is vitally dependent upon the health of the gum tissue. Therefore do not injure the gums by crowding large toothpicks between the teeth, or by using coarse tooth powder. If a toothpick must be used, a small quill is best. Do not use a mouth wash as a substitute for brushing the teeth.

PERIODICAL EXAMINATION OF THE TEETH.—A periodical examination of the teeth is indispensable. It will lead to the discovery of decay in its initial stages. By far the greater factor in the fight for good teeth is the daily faithful care on the part of the individual.

PRESERVATION OF THE TEETH.—The preservation of the teeth depends more upon tooth environment than upon any inherent quality in the tooth itself; therefore abstain from dissipation, that the saliva may be kept in a healthy, normal condition. The teeth are among our most precious natural possessions and can only be saved by persistent care and attention in the maintenance of a sanitary condition in the oral cavity.

It is a truth, that the beauty, vigour and health of the human body and mind are greatly dependent on the possession of a sound, useful masticating apparatus.

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